CLAIMS

1. A high octane number gasoline pool comprising a base from hydro-isomerisation of a C5 to C8 cut and comprising at least 2% of di-branched paraffins containing 7 carbon atoms.

2. A gasoline pool according to claim 1, in which the content of di-branched paraffins containing 7 carbon atoms is at least 3%.

3. A gasoline pool according to claim 1, in which the content of di-branched paraffins containing 7 carbon atoms is at least 4.5%.

4. A gasoline pool according to any one of claims 1 to 3, in which the base from hydro-isomerisation originates from hydro-isomerisation of a C5-C8 cut.

5. A gasoline pool according to any one of claims 1 to 3, in which the base from hydro-isomerisation originates from hydro-isomerisation of a C6-C8 cut.

6. A process for producing a gasoline stock by hydro-isomerisation of a feed constituted by a C5 to C8 cut, comprising at least one hydro-isomerisation section and at least one separation section, in which the hydro-isomerisation section comprises at least one reactor, and the separation section comprises at least one unit and produces at least two streams: a first stream which is rich in di- and tri-branched paraffins, and possibly in naphthenes and aromatic compounds which is sent to the gasoline pool; and a second stream which is rich in straight-chain paraffins and mono-branched paraffins which is recycled to the inlet to the hydro-isomerisation section.

7. A process for producing a gasoline stock by hydro-isomerisation of a feed constituted by a C5 to C8 cut, comprising at least two hydro-isomerisation section and at least one separation section, in which the separation section produces three streams: a first stream which is rich in di and tri-branched

paraffins, and possibly in naphthenes and aromatic compounds which is sent to the gasoline pool; a second stream which is rich in straight-chain paraffins which is recycled to the inlet to the first hydro-isomerisation section; and a third stream which is rich in mono-branched paraffins which is recycled to the inlet to the second hydro-isomerisation section.

8. A process according to claim 7, in which all of the effluent from the first hydro-isomerisation section traverses the second section.

9. A process according to claim 8, in which the separation section is located downstream of the hydro-isomerisation sections, the feed is mixed with the straight-chain paraffins recycled from the separation section, the resulting mixture is sent to the first hydro-isomerisation section, the effluent leaving the first hydro-isomerisation section is mixed with the stream which is rich in mono-branched paraffins from the separation section, then the mixture is sent to the second hydro-isomerisation section, and the effluent from the latter section is sent to the separation section.

10. A process according to claim 8, in which the separation section is located upstream of the hydro-isomerisation sections, the feed is mixed with the stream from the second hydro-isomerisation section, the resulting mixture is sent to the separation section, the effluent which is rich in straight-chain paraffins is sent to the first hydro-isomerisation section, the stream which is rich in mono-branched paraffins from the separation section is added to the effluent from the first hydro-isomerisation section, and the ensemble is sent to the second hydro-isomerisation section.

11. A process according to claim 7, in which the effluents from the hydro-isomerisation sections are sent to at least one separation section.

12. A process according to any one of claims 6 to 11, in which the separation section is constituted by at least two distinct units to carry out two different types of separation.

13. A process according to any one of claims 6 to 12, in which the separation section comprises one or more sections operating by adsorption.

14. A process according to any one of claims 6 to 12, in which the separation section comprises one or more sections operating by permeation.

15. A process according to any one of claims 6 to 12, in which the separation section comprises at least one unit operating by adsorption and at least one unit operating by permeation.

16. A process according to any one of claims 6 to 15, in which at least one light fraction is separated by distillation upstream or downstream of the hydro-isomerisation and/or separation sections.

17. A process according to any one of claims 6 to 15, in which the feed contains the C5 cut and at least one deisopentaniser and/or at least one depentaniser are located upstream or downstream of the hydro-isomerisation and/or separation sections.

18. A process according to any one of claims 6 to 15, in which the feed contains a C6 cut but contains no C5, and at least one deisohexaniser is located upstream or downstream of the hydro-isomerisation and/or separation sections.

19. A process according to any one of claims 16 to 18, in which the light fraction or the isopentane and/or the pentane and/or a mixture of the two, or the hexane, act as an eluent or a flushing gas for the adsorption or permeation separation processes respectively.

20. A process according to any one of claims 6 to 18, in which butane and/or isobutane is used as an eluent or a flushing gas for the adsorption or permeation separation processes respectively.

21. A process according to claim 17, in which the isopentane is sent to the gasoline pool.

22. A process according to any one of claims 6 to 21; in which the feed comprises at least 12 mole % of hydrocarbons containing at least 7 carbon atoms.

23. A process according to any one of claims 6 to 21, in which the feed comprises at least 15 mole % of hydrocarbons containing at least 7 carbon atoms.

24. A process according to any one of claims 6 to 23, in which hydro-isomerisation is carried out at temperatures in the range 25°C to 450°C, at a pressure in the range 0.01 to 7 MPa, at a space velocity, measured in kg of feed per kg of catalyst per hour, in the range 0.5 to 2, and with an H2/hydrocarbons molar ratio in the range 0.01 to 50.

25. A process according to any one of claims 6 to 24, in which separation is carried out at temperatures in the range 50°C to 450°C and at a pressure in the range 0.01 to 7 MPa.